## Listing of claims:

## 1-5. (Cancelled)

- 6. (Original) A process for producing a polar olefin copolymer comprising copolymerizing a non-polar olefin and a polar olefin in the presence of a catalyst comprising:
  - (A3) a reaction product of
- (C') a compound of a transition metal selected from Groups 3 to 11 of the periodic table, which is represented by the following formula (c'):

$$MX_k$$
 ...(C')

wherein M is a transition metal atom selected from Groups 3 to 11 of the periodic table,

k is a number satisfying a valence of M, and

X is a hydrogen atom, a halogen atom, an oxygen atom, a hydrocarbon group, an oxygen-containing group, a sulfur-containing group, a nitrogen-containing group, a boron-containing group, an aluminum-containing group, a phosphorus-containing group, a halogen-containing group, a heterocyclic compound residual group, a silicon-containing group, a germanium-containing group or a tin-containing group, and when k is 2 or greater, plural atoms or groups indicated by X may be

the same or different, and plural groups indicated by X may be bonded to each other to form a ring, and

(A-iii) a compound represented by the following formula
(III):

$$\begin{array}{c|c}
R^{22} & R^{21} \\
R^{23} & N \\
R^{24} & A \\
R^{25} & R^{27}
\end{array} (III)$$

wherein A is an oxygen atom, a sulfur atom or a selenium atom, or a nitrogen atom having a substituent  $R^{26}$ , and

R<sup>21</sup> to R<sup>28</sup> may be the same or different, they are each a hydrogen atom, a halogen atom, a hydrocarbon group, an oxygencontaining group, a sulfur-containing group, a nitrogencontaining group, a boron-containing group, an aluminum-containing group, a phosphorus-containing group, a heterocyclic compound residual group, a silicon-containing group, a germanium-containing group or a tin-containing group, two or more of them may be bonded to each other to form a ring.

- 7. (Original) A process for producing a polar olefin copolymer comprising copolymerizing a non-polar olefin and a polar olefin in the presence of a catalyst comprising:
  - (A3) a reaction product of
- (C') a compound of a transition metal selected from Groups 3 to 11 of the periodic table, which is represented by the following formula (c'):

 $MX_k$  ... (C')

wherein M is a transition metal atom selected from Groups 3 to 11 of the periodic table,

k is a number satisfying a valence of M, and

X is a hydrogen atom, a halogen atom, an oxygen atom, a hydrocarbon group, an oxygen-containing group, a nitrogen-containing group, containing group, containing group, an aluminum-containing group, a phosphoruscontaining group, a halogen-containing group, a heterocyclic compound residual group, a silicon-containing group, germanium-containing group or a tin-containing group, and when k is 2 or greater, plural atoms or groups indicated by X may be the same or different, and plural groups indicated by X may be bonded to each other to form a ring, and

(A-iii) a compound represented by the following formula (III):

$$\begin{array}{c|c}
R^{22} & R^{21} \\
R^{23} & N \\
R^{24} & A \\
R^{25} & R^{27}
\end{array} (III)$$

wherein A is an oxygen atom, a sulfur atom or a selenium atom, or a nitrogen atom having a substituent  $\mathbb{R}^{26}$ , and

R<sup>21</sup> to R<sup>28</sup> may be the same or different, they are each a hydrogen atom, a halogen atom, a hydrocarbon group, an oxygen-containing group, a sulfur-containing group, a nitrogen-containing group, a boron-containing group, an aluminum-containing group, a phosphorus-containing group, a heterocyclic compound residual group, a silicon-containing group, a germanium-containing group or a tin-containing group, two or more of them may be bonded to each other to form a ring; and

- (B) at least one compound selected from the group consisting of:
  - (B-1) an organometallic compound,
  - (B-2) an organoaluminum oxy-compound, and
- (B-3) a compound which reacts with the transition metal compound (A3) to form an ion pair.

8. (Previously Presented) The process for producing a polar olefin copolymer as claimed in claim 6 or 7, wherein the compound of a transition metal represented by the formula (c') is a compound of a transition metal selected from Groups 4, 5, 6 or 11 of the periodic table.

9-14. (Cancelled)